REMARKS

Claims 1-24 and 26-27 are now pending in this application. Claim 25 has been cancelled without prejudice or disclaimer. Applicants have amended claim 12 and submit new claims 26 and 27. No new matter has been added by the amendment or new claims. Support for new claim 26 can be found, *inter alia*, in Figure 3. Support for new claim 27 can be found, *inter alia*, in the specification at ¶ 28. Applicants respectfully request reconsideration of all outstanding rejections in view of the preceding amendments and following remarks.

Claim Rejections Under 35 U.S.C. § 103

The Office Action rejected claims 1-25 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Application Publication No. 2002/0026108 by Colvin et al. ("Colvin") in view of U.S. Patent No. 6,402,689 to Scarantino et al. ("Scarantino"). Applicants traverse the rejection on the basis that these claims recite subject matter neither disclosed nor suggested by the combination of Colvin and Scarantino.

Claim 1 recites a printed circuit device. The printed circuit device comprises a substrate formed substantially of ferrite material. The substrate comprises top and bottom surfaces, first and second side surfaces between the top and bottom surfaces along a major dimension of the substrate, and first and second end surfaces between the top and bottom surfaces along a minor dimension of the substrate. The printed circuit device further comprises at least one circuit component mounted to a main surface of the substrate and a conductor formed on the substrate and extending over one of the main surfaces and side surfaces in a coil pattern.

The claimed invention represents a substantial advance over the prior art. For example, by forming the conductor on the ferrite substrate, the printed circuit board has a high level of device to device sameness and precision that eliminates the need to measure each device separately for its tuning capacity. As a result, the manufacturing costs are much less expensive because the printed circuit device comes with a precisely tuned conductor formed on the substrate. This is in clear contrast to a wrapped coil that must be wound around the substrate, then installed as a separate step, and then tuned. In addition, conductor formed on the substrate

is much more reliable because it is already connected into the circuit substrate whereas a discrete wound coil must be attached. In microcircuits (or any circuit), points of attachment are most likely to fail points. By forming the conductor on the ferrite substrate, these attachment points are substantially reduced or eliminated.

The prior art completely fails to teach or suggest the claimed invention. Colvin discloses an electro-optical sensing device for detecting the presence or concentration of an analyte in a liquid or gaseous medium. *See* Colvin at ¶ 3. To that end, Colvin describes a circuit board 70 and a signal amplifier 66 mounted on the circuit board 70. *See e.g.,* Colvin at ¶ 95. As admitted in the Office Action, Colvin fails to disclose, amongst other things, (a) a conductor formed on a (b) substrate formed substantially of ferrite material. Accordingly, claim 1 is patentable over Colvin alone. The Office Action, however, alleges that Scarantino remedies the deficiencies of Colvin with respect to claim 1. Applicants respectfully disagree.

Scarantino appears to describe implantable devices and methods for monitoring physiological parameters. *See* Scarantino, col. 1, lines 14-16. Among other things, Scarantino describes sensor units (50, 50', 50'' and 50'''). *See* Scarantino, col. 23, line 4 – col. 24, line 55. The Office Action states that "Scrutiny discloses an implantable sensor comprising: a substrate (125P) and a conductor (58) formed on said substrate and extending over one of said main surfaces and side surfaces in a coil pattern (Figs.7-8B)." *See* Office Action, page 3. However, the sensor illustrated in Figs. 7-8B and described in Scarantino is completely different from the present claimed invention. For example, transmitter coil 58 of Scarantino is substantially circumferentially wrapped around the substrate and the electronics 125 of the sensor. This configuration is very clearly illustrated in each of the views represented in Figs. 7-8B. *See also* Scarantino, col. 23, lines 52-54. The wrapped coil disclosed and illustrated in Scarantino is very different form the printed circuit device of claim 1 comprising a conductor formed on the substrate and extending over one of the main surfaces and side surfaces in a coil pattern.

The Office Action further purports to rely on the statement in Scarantino that the coil can be integrated into the circuit board itself via a ferrite substrate. *See* Office Action, page 3. Scarantino provides no illustration or discussion of what this means or how a person skilled in the art would make it. In addition, the phrase "integrated into" does not mean the same thing as

"formed on," as recited by claim 1. Indeed, Scarantino fails to either define the phrase "integrated into" or illustrate an embodiment of the invention with the coil integrated into the circuit board.

Accordingly, Scarantino fails to remedy the deficiencies of Colvin and claim 1 is allowable over that combination of references. Applicants, therefore, respectfully request the withdrawal of the rejection of claim 1 and its dependent claims 2-11 and 24.

Claim 12 recites an improvement in an electronic device having an integrated circuit formed on a printed circuit device and an inductive coil for data and/or power transfer. The improvement comprises forming the printed circuit device substantially of ferrite material. Similarly to claim 1, claim 12 also recites that the device is improved by forming the inductive coil on the printed circuit device and using said printed circuit device as a ferrite core for said inductive coil. As discussed above with regard to claim 1, the combination of Colvin and Scarantino fails to disclose or suggest forming the inductive coil on the printed circuit device, as required by claim 12. Applicants, therefore, respectfully request withdrawal of the rejection of claim 12.

Claim 13 recites a fluorescence sensor device. The device comprises a light source for introducing light into a fluorescent indicator that interacts with a medium and a photodetector for detecting light emitted by said fluorescent indicator in response to the introduced light, and for outputting a signal proportional to the detected light, the response of the fluorescent indicator varying in accordance with the presence and quantity of an analyte in the medium. Additionally, the device comprises a coil for receiving electrical power from an external power supply, and for communicating said signal to an external processing device. The light source and photdetector are mounted on a substrate that is formed substantially of ferrite material. Similarly to claims 1 and 12, claim 13 also recites that the coil is formed on the substrate such that said ferrite material increases induction characteristics of said coil. As previously discussed with regard to claims 1 and 12, the combination of Colvin and Scarantino fails to disclose or suggest forming the coil on the ferrite substrate. Accordingly, claim 13 is patentable over the combination of Colvin and Scarantino. Applicants, therefore, respectfully request withdrawal of the rejection of claim 13 and its dependent claims 14-23.

New Claims

New claims 26 and 27 are patentable over the cited art for at least the same reasons stated above with respect to claim 1, from which they depend. Claim 26, however, is independently patentable for the additional reason that none of the cited art teaches or suggests separate circuit component and coil sections of the substrate. Claim 27 is independently patentable over the cited art for the additional reason that none of the cited art discloses or suggests a printed circuit board with a coil where the coil is printed on a ferrous substrate. Applicants, therefore, respectfully request that claims 26 and 27 be allowed and passed to issue.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance and should now be passed to issue. A Notice of Allowance is therefore respectfully solicited.

The Commissioner is hereby authorized to charge any fees and to credit any overpayments that may be required by this paper under 37 C.F.R. §§ 1.16 and 1.17 to Deposit Account No. 02-2135.

Respectfully submitted,

By: _____

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